1. A process for preparing oxiranes by reacting an organic compound with a hydroperoxide in the presence of a solvent and a catalyst, which comprises at least the steps (i) to (iii):

(i) reaction of the hydroperoxide with the organic compound to give a product mixture comprising the reacted organic compound and unreacted hydroperoxide,

(ii) separation of the unreacted hydroperoxide from the mixture resulting from step (i),

(iii) reaction of the hydroperoxide which has been separated off in step (ii) with the organic compound,

wherein the reaction in step (iii) is carried out in a tube reactor which has at least two feed points for the reaction mixture comprising at least the organic compound, the hydroperoxide and the solvent, or at least two outlets for the product mixture, or at least two feed points and at least two outlets.

2. The process as claimed in claim 1, wherein an isothermal fixed-bed reactor is used in step (i) and an adiabatic fixed-bed reactor is used as tube reactor in step (iii).

3. The process as claimed in claim 1 or 2, wherein the tube reactor has at least one of the features (a) to (f):

(a) its longitudinal axis is arranged vertically,

(b) at least one feed point is located at the bottom of the reactor,

(c) at least one outlet is located at the top of the reactor,

(d) at least one feed point or outlet or feed point and outlet is/are located at the side of the reactor,

(e) the number of feed points is not more than 10,

(f) the number of outlets is not more than 10.

4. The process as claimed in any of claims 1 to 3, wherein the reaction mixture is fed into the tube reactor simultaneously via all feed points.

4. The process as claimed in any of claims 1 to 3, wherein the reaction mixture is fed into the tube reactor simultaneously via all feed points.

5. The process as claimed in any of claims 1 to 3, wherein the reaction mixture is fed into the tube reactor exclusively via the uppermost feed point and after the hydroperoxide conversion has dropped to a predefined threshold value, the reaction mixture is fed in via the next lower feed point.

6. The process as claimed in any of claims 1 to 5, wherein the product mixture is taken from the tube reactor exclusively via the bottommost outlet and when the hydroperoxide conversion has dropped to a previously defined threshold value, the product mixture is taken off via the next higher outlet.

7. The process as claimed in any of claims 1 to 6, wherein part of the reaction mixture or of the solvent is fed in simultaneously with the reaction mixture at the bottommost feed point of the tube reactor.

8. The process as claimed in any of claims 1 to 7, wherein each feed point is provided with a device by means of which the reaction mixture is uniformly distributed over the entire cross section of the tube reactor.

9. The process as claimed in any of claims 1 to 8, wherein the reaction mixture fed into the tube reactor has a pH of from 2 to 6 and a temperature of from 0 to 120°C and the pressure in the tube reactor is from 1 to 100 bar.

10. The process as claimed in any of claims 1 to 9, wherein propylene is used as organic compound and hydrogen peroxide is used as hydroperoxide, the oxirane is propylene oxide and the reaction is carried out in methanol as solvent over a heterogeneous catalyst comprising a zeolite.

11. The process as claimed in claim 10, wherein the zeolite is TS-1.